



1. The order of matrix  $A = \begin{bmatrix} -5 \\ -5 \end{bmatrix}$  is

- (i)  $2 \times 2$  (ii)  $2 \times 1$  (iii)  $1 \times 2$  (iv)  $3 \times 1$  (v)  $1 \times 1$

2. The order of matrix  $A = \begin{bmatrix} -4 & 2 \end{bmatrix}$  is

- (i)  $2 \times 3$  (ii)  $1 \times 2$  (iii)  $2 \times 1$  (iv)  $2 \times 2$  (v)  $1 \times 3$

3. The order of matrix  $A = \begin{bmatrix} -2 & 0 & 4 \end{bmatrix}$  is

- (i)  $1 \times 4$  (ii)  $2 \times 3$  (iii)  $3 \times 1$  (iv)  $1 \times 3$  (v)  $2 \times 4$

4. The order of matrix  $A = \begin{bmatrix} 1 & 4 \\ 4 & 3 \end{bmatrix}$  is

- (i)  $2 \times 3$  (ii)  $2 \times 2$  (iii)  $1 \times 2$  (iv)  $2 \times 1$  (v)  $3 \times 2$

5. If the elements of matrix A are multiplied with  $-1$  , we get

- (i) additive inverse of A (ii) multiplicative identity of A (iii) multiplicative inverse of A
- (iv) additive identity of A

6. If the elements of matrix A are multiplied with  $0$  , we get

- (i) additive inverse of A (ii) multiplicative inverse of A (iii) multiplicative identity of A
- (iv) additive identity of A

7. A  $4 \times 3$  matrix has

- a) 4 rows and 12 columns
- b) 7 rows and 3 columns
- c) 3 rows and 4 columns
- d) 4 rows and 3 columns

- (i)  $\{d\}$  (ii)  $\{c,a,d\}$  (iii)  $\{a,d\}$  (iv)  $\{b,d\}$

8. Which of the following are true for matrices A and B ?

- a) If A and B can be added, they must have the same order
- b) If  $AB = 0$ ,  $A = 0$  or  $B = 0$  or both A and B are zero matrices
- c) If A and B can be multiplied, they must have the same order
- d) The orders of  $(A \times B)$  and  $(B \times A)$  are same

- (i)  $\{a\}$  (ii)  $\{c,a\}$  (iii)  $\{b,a\}$  (iv)  $\{d,b,a\}$

9. Which of the following are true ?

- a) The order of  $(A \times B)$  and  $(B \times A)$  is same
  - b) If  $AB = 0$ , then  $A = 0$  or  $B = 0$  or both  $A$  &  $B$  are 0
  - c) If matrices  $A$  &  $B$  can be added, they must have the same order
  - d) If matrices  $A$  &  $B$  can be multiplied, they must have the same order
- (i) {d,a,c} (ii) {b,c} (iii) {a,c} (iv) {c}

10. Which of the following are true for matrices  $A$ ,  $B$  and  $C$  ?

- a)  $A \times (B \times C) = (A \times B) \times C$
  - b)  $(A+B) \times C = (A \times B) + (A \times C)$
  - c)  $(A \times I) = (I \times A) = I$
  - d)  $A \times (B+C) = (A \times B) + (A \times C)$
  - e)  $(A \times I) = (I \times A) = A$
  - f)  $(A \times B) = (B \times A)$
- (i) {b,a} (ii) {a,d,e} (iii) {f,b,e} (iv) {c,d} (v) {c,a,d}

11. If the order of matrix  $A$  is  $m \times n$  and  $B$  is  $n \times o$ ,  
then the order of  $(A \times B)$  is

- (i)  $o \times m$  (ii)  $n \times o$  (iii)  $m \times o$  (iv)  $m \times n$

12. Which of the following are true ?

- a) If  $A \times B$  is possible, the no of rows in  $A$  must be equal to no of cols in  $B$
  - b) If  $A \times B$  is possible, the no of cols in  $A$  must be equal to no of rows in  $B$
  - c) If  $A \times B$  is possible, the no of rows in  $A$  must be equal to no of rows in  $B$
  - d) If  $A \times B$  is possible, the no of cols in  $A$  must be equal to no of cols in  $B$
- (i) {a,b} (ii) {b} (iii) {d,a,b} (iv) {c,b}

13. If  $A = \begin{bmatrix} a & b \\ c & d \end{bmatrix}$  and  $B = \begin{bmatrix} p & q \\ r & s \end{bmatrix}$ ,

then  $(A \times B) =$

- (i)  $\begin{bmatrix} pa + qc & pb + qd \\ ra + sc & rb + sd \end{bmatrix}$  (ii)  $\begin{bmatrix} ap + cq & ar + cs \\ bp + dq & br + ds \end{bmatrix}$  (iii)  $\begin{bmatrix} ap + bq & ar + bs \\ cp + dq & cr + ds \end{bmatrix}$   
(iv)  $\begin{bmatrix} ap + br & cp + dr \\ cp + dr & cq + ds \end{bmatrix}$  (v)  $\begin{bmatrix} ap + br & cp + dr \\ aq + bs & cq + ds \end{bmatrix}$

14. If  $A = \begin{bmatrix} a & b & c \\ d & e & f \end{bmatrix}$  and  $B = \begin{bmatrix} p & q \\ r & s \\ t & u \end{bmatrix}$ ,

then  $(A \times B) =$

- (i)  $\begin{bmatrix} pa + qd & pb +qe & pc + qf \\ ra + sd & rb + se & rc + sf \\ ta + ud & tb + ue & tc + uf \end{bmatrix}$  (ii)  $\begin{bmatrix} ap + br + ct & dp + er + ft \\ aq + bs + cu & dq + es + fu \end{bmatrix}$   
(iii)  $\begin{bmatrix} ap + br + ct & aq + bs + cu \\ dp + er + ft & dq + es + fu \end{bmatrix}$  (iv)  $\begin{bmatrix} a & b & c \\ d & e & f \end{bmatrix}$  (v)  $\begin{bmatrix} ap + dq & ar + ds & at + du \\ bp + eq & br + es & bt + eu \\ cp + fq & cr + fs & ct + fu \end{bmatrix}$

15. If  $A = \begin{bmatrix} a & b & c \\ d & e & f \\ g & h & i \end{bmatrix}$  and  $B = \begin{bmatrix} p & q & r \\ s & t & u \\ v & w & x \end{bmatrix}$ ,

then  $(A \times B) =$

- (i)  $\begin{bmatrix} pa + qd + rg & pb +qe + rh & pc + qf + ri \\ sa + td + ug & sb + te + uh & sc + tf + ui \\ va + wd + xg & vb + we + xh & vc + wf + xi \end{bmatrix}$  (ii)  $\begin{bmatrix} ap + bq + cr & as + bt + cu & av + bw + cx \\ dp + eq + fr & ds + et + fu & dv + ew + fx \\ gp + hq + ir & gs + ht + iu & gv + hw + ix \end{bmatrix}$
- (iii)  $\begin{bmatrix} ap + bs + cv & dp + es + fv & gp + hs + iv \\ aq + bt + cw & dq + et + fw & gq + ht + iw \\ ar + bu + cx & dr + eu + fx & gr + hu + ix \end{bmatrix}$  (iv)  $\begin{bmatrix} ap + dq + gr & as + dt + gu & av + dw + gx \\ bp + eq + hr & bs + et + hu & bv + ew + hx \\ cp + fq + ir & cs + ft + iu & cv + fw + ix \end{bmatrix}$
- (v)  $\begin{bmatrix} ap + bs + cv & aq + bt + cw & ar + bu + cx \\ dp + es + fv & dq + et + fw & dr + eu + fx \\ gp + hs + iv & gq + ht + iw & gr + hu + ix \end{bmatrix}$

16. If  $A = \begin{bmatrix} a_{11} & a_{12} \\ a_{21} & a_{22} \end{bmatrix}$  and  $B = \begin{bmatrix} b_{11} & b_{12} \\ b_{21} & b_{22} \end{bmatrix}$ ,

then  $(A \times B) =$

- (i)  $\begin{bmatrix} a_{11}b_{11} + a_{21}b_{12} & a_{11}b_{21} + a_{21}b_{22} \\ a_{12}b_{11} + a_{22}b_{12} & a_{12}b_{21} + a_{22}b_{22} \end{bmatrix}$  (ii)  $\begin{bmatrix} b_{11}a_{11} + b_{12}a_{21} & b_{11}a_{12} + b_{12}a_{22} \\ b_{21}a_{11} + b_{22}a_{21} & b_{21}a_{12} + b_{22}a_{22} \end{bmatrix}$
- (iii)  $\begin{bmatrix} a_{11}b_{11} + a_{12}b_{12} & a_{11}b_{21} + a_{12}b_{22} \\ a_{21}b_{11} + a_{22}b_{12} & a_{21}b_{21} + a_{22}b_{22} \end{bmatrix}$  (iv)  $\begin{bmatrix} a_{11}b_{11} + a_{12}b_{21} & a_{21}b_{11} + a_{22}b_{21} \\ a_{11}b_{12} + a_{12}b_{22} & a_{21}b_{12} + a_{22}b_{22} \end{bmatrix}$
- (v)  $\begin{bmatrix} a_{11}b_{11} + a_{12}b_{21} & a_{11}b_{12} + a_{12}b_{22} \\ a_{21}b_{11} + a_{22}b_{21} & a_{21}b_{12} + a_{22}b_{22} \end{bmatrix}$

17. If  $A = \begin{bmatrix} a_{11} & a_{12} & a_{13} \\ a_{21} & a_{22} & a_{23} \end{bmatrix}$  and  $B = \begin{bmatrix} b_{11} & b_{12} \\ b_{21} & b_{22} \\ b_{31} & b_{32} \end{bmatrix}$ ,

then  $(A \times B) =$

$$a_{11}b_{11} + a_{12}b_{12} \quad a_{11}b_{21} + a_{12}b_{22} \quad a_{11}b_{31} + a_{12}b_{32}$$

(i)  $\begin{bmatrix} a_{12}b_{11} + a_{22}b_{12} & a_{12}b_{21} + a_{22}b_{22} & a_{12}b_{31} + a_{22}b_{32} \\ a_{13}b_{11} + a_{23}b_{12} & a_{13}b_{21} + a_{23}b_{22} & a_{13}b_{31} + a_{23}b_{32} \end{bmatrix}$

(ii)  $\begin{bmatrix} a_{11}b_{11} + a_{12}b_{21} + a_{13}b_{31} & a_{11}b_{12} + a_{12}b_{22} + a_{13}b_{32} \\ a_{21}b_{11} + a_{22}b_{21} + a_{23}b_{31} & a_{21}b_{12} + a_{22}b_{22} + a_{23}b_{32} \end{bmatrix}$

(iii)  $\begin{bmatrix} b_{11}a_{11} + b_{12}a_{21} & b_{11}a_{12} + b_{12}a_{22} & b_{11}a_{13} + b_{12}a_{23} \\ b_{21}a_{11} + b_{22}a_{21} & b_{21}a_{12} + b_{22}a_{22} & b_{21}a_{13} + b_{22}a_{23} \\ b_{31}a_{11} + b_{32}a_{21} & b_{31}a_{12} + b_{32}a_{22} & b_{31}a_{13} + b_{32}a_{23} \end{bmatrix}$

(iv)  $\begin{bmatrix} a_{11}b_{11} + a_{12}b_{21} + a_{13}b_{31} & a_{21}b_{11} + a_{22}b_{21} + a_{23}b_{31} \\ a_{11}b_{12} + a_{12}b_{22} + a_{13}b_{32} & a_{21}b_{12} + a_{22}b_{22} + a_{23}b_{32} \end{bmatrix}$  (v)  $\begin{bmatrix} a_{11} & a_{12} & a_{13} \\ a_{21} & a_{22} & a_{23} \end{bmatrix}$

---

18. If  $A = \begin{bmatrix} a_{11} & a_{12} & a_{13} \\ a_{21} & a_{22} & a_{23} \\ a_{31} & a_{32} & a_{33} \end{bmatrix}$  and  $B = \begin{bmatrix} b_{11} & b_{12} & b_{13} \\ b_{21} & b_{22} & b_{23} \\ b_{31} & b_{32} & b_{33} \end{bmatrix}$ ,

then  $(A \times B) =$

$$a_{11}b_{11} + a_{12}b_{21} + a_{13}b_{31} \quad a_{11}b_{12} + a_{12}b_{22} + a_{13}b_{32} \quad a_{11}b_{13} + a_{12}b_{23} + a_{13}b_{33}$$

(i)  $\begin{bmatrix} a_{21}b_{11} + a_{22}b_{21} + a_{23}b_{31} & a_{21}b_{12} + a_{22}b_{22} + a_{23}b_{32} & a_{21}b_{13} + a_{22}b_{23} + a_{23}b_{33} \\ a_{31}b_{11} + a_{32}b_{21} + a_{33}b_{31} & a_{31}b_{12} + a_{32}b_{22} + a_{33}b_{32} & a_{31}b_{13} + a_{32}b_{23} + a_{33}b_{33} \end{bmatrix}$

$$a_{11}b_{11} + a_{12}b_{12} + a_{13}b_{13} \quad a_{11}b_{21} + a_{12}b_{22} + a_{13}b_{23} \quad a_{11}b_{31} + a_{12}b_{32} + a_{13}b_{33}$$

(ii)  $\begin{bmatrix} a_{21}b_{11} + a_{22}b_{12} + a_{23}b_{13} & a_{21}b_{21} + a_{22}b_{22} + a_{23}b_{23} & a_{21}b_{31} + a_{22}b_{32} + a_{23}b_{33} \\ a_{31}b_{11} + a_{32}b_{12} + a_{33}b_{13} & a_{31}b_{21} + a_{32}b_{22} + a_{33}b_{23} & a_{31}b_{31} + a_{32}b_{32} + a_{33}b_{33} \end{bmatrix}$

$$b_{11}a_{11} + b_{12}a_{21} + b_{13}a_{31} \quad b_{11}a_{12} + b_{12}a_{22} + b_{13}a_{32} \quad b_{11}a_{13} + b_{12}a_{23} + b_{13}a_{33}$$

(iii)  $\begin{bmatrix} b_{21}a_{11} + b_{22}a_{21} + b_{23}a_{31} & b_{21}a_{12} + b_{22}a_{22} + b_{23}a_{32} & b_{21}a_{13} + b_{22}a_{23} + b_{23}a_{33} \\ b_{31}a_{11} + b_{32}a_{21} + b_{33}a_{31} & b_{31}a_{12} + b_{32}a_{22} + b_{33}a_{32} & b_{31}a_{13} + b_{32}a_{23} + b_{33}a_{33} \end{bmatrix}$

$$a_{11}b_{11} + a_{21}b_{12} + a_{31}b_{13} \quad a_{11}b_{21} + a_{21}b_{22} + a_{31}b_{23} \quad a_{11}b_{31} + a_{21}b_{32} + a_{31}b_{33}$$

(iv)  $\begin{bmatrix} a_{12}b_{11} + a_{22}b_{12} + a_{32}b_{13} & a_{12}b_{21} + a_{22}b_{22} + a_{32}b_{23} & a_{12}b_{31} + a_{22}b_{32} + a_{32}b_{33} \\ a_{13}b_{11} + a_{23}b_{12} + a_{33}b_{13} & a_{13}b_{21} + a_{23}b_{22} + a_{33}b_{23} & a_{13}b_{31} + a_{23}b_{32} + a_{33}b_{33} \end{bmatrix}$

$$a_{11}b_{11} + a_{12}b_{21} + a_{13}b_{31} \quad a_{21}b_{11} + a_{22}b_{21} + a_{23}b_{31} \quad a_{31}b_{11} + a_{32}b_{21} + a_{33}b_{31}$$

(v)  $\begin{bmatrix} a_{11}b_{12} + a_{12}b_{22} + a_{13}b_{32} & a_{21}b_{12} + a_{22}b_{22} + a_{23}b_{32} & a_{31}b_{12} + a_{32}b_{22} + a_{33}b_{32} \\ a_{11}b_{13} + a_{12}b_{23} + a_{13}b_{33} & a_{21}b_{13} + a_{22}b_{23} + a_{23}b_{33} & a_{31}b_{13} + a_{32}b_{23} + a_{33}b_{33} \end{bmatrix}$

19. If  $A = \begin{bmatrix} (-4) & 2 \end{bmatrix}$ ,  $B = \begin{bmatrix} x \\ y \end{bmatrix}$ , then  $(A \times B) =$

- (i)  $\begin{bmatrix} (-4x+2y) & (-4x+2y) \end{bmatrix}$  (ii)  $\begin{bmatrix} (-4x) & (-4y) \\ 2x & 2y \end{bmatrix}$  (iii)  $\begin{bmatrix} (-4x) & 2x \\ (-4y) & 2y \end{bmatrix}$  (iv)  $\begin{bmatrix} (-4x+2y) \\ (-4x+2y) \end{bmatrix}$   
 (v)  $\begin{bmatrix} (-4x+2y) \\ (-4x+2y) \end{bmatrix}$

20. Find  $\begin{bmatrix} x & y \end{bmatrix} \begin{bmatrix} a & b \\ c & d \end{bmatrix} \begin{bmatrix} x \\ y \end{bmatrix}$

- (i)  $\begin{bmatrix} x^2 + y^2 \end{bmatrix}$  (ii)  $\begin{bmatrix} x^2a + xyc & x^2b + xyd \\ yxa + y^2c & yxb + y^2d \end{bmatrix}$  (iii)  $\begin{bmatrix} x^2a + ycx + xby + y^2d \end{bmatrix}$   
 (iv)  $\begin{bmatrix} xay + y^2b + x^2c + ydx \end{bmatrix}$  (v)  $\begin{bmatrix} x^2a + ybx + xcy + y^2d \end{bmatrix}$

21. If the order of matrix A is  $m \times n$  and B is  $n \times o$  and C is  $o \times p$ ,  
 then the order of  $(A \times B) \times C$  is

- (i)  $o \times m$  (ii)  $m \times o$  (iii)  $p \times m$  (iv)  $m \times p$  (v)  $n \times p$

22. If the order of matrix  $(A \times B)$  is  $3 \times 1$  and the order of B is  $2 \times 1$ ,  
 then the order of A is ?

- (i)  $3 \times 3$  (ii)  $4 \times 2$  (iii)  $4 \times 3$  (iv)  $3 \times 1$  (v)  $3 \times 2$

23. If the order of matrix  $(A \times B)$  is  $2 \times 1$  and the order of A is  $2 \times 5$ ,  
 then the order of B is ?

- (i)  $4 \times 1$  (ii)  $5 \times 2$  (iii)  $6 \times 1$  (iv)  $6 \times 2$  (v)  $5 \times 1$

24. If  $A = \begin{bmatrix} -3 & 1 \\ 4 & 2 \end{bmatrix}$  and the sum of the values of

elements of matrix  $kA = 16$ , find k

- (i) 4 (ii) 7 (iii) 5 (iv) 1 (v) 3

25. Find the multiplicative identity of matrix A =  $\begin{bmatrix} 0 & -1 \\ 1 & 2 \end{bmatrix}$

- (i)  $\begin{bmatrix} 1 & -1 \\ 0 & 1 \end{bmatrix}$  (ii)  $\begin{bmatrix} 1 & 0 \\ 0 & -2 \end{bmatrix}$  (iii)  $\begin{bmatrix} 1 & 0 \\ 0 & 4 \end{bmatrix}$  (iv)  $\begin{bmatrix} 1 & 0 \\ 1 & 1 \end{bmatrix}$  (v)  $\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$

26. Find the multiplicative identity of matrix A =  $\begin{bmatrix} 4 & 4 & 0 \\ 2 & 0 & 1 \\ -4 & 1 & 0 \end{bmatrix}$

- (i)  $\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 2 \end{bmatrix}$  (ii)  $\begin{bmatrix} 1 & 0 & 0 \\ 0 & 4 & 0 \\ 0 & 0 & 1 \end{bmatrix}$  (iii)  $\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & -2 & 1 \end{bmatrix}$  (iv)  $\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ -1 & 0 & 1 \end{bmatrix}$  (v)  $\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$

27. Which of the following pairs of matrices can be multiplied?

- (i)  $\begin{bmatrix} -4 & 4 \\ 9 & -3 \end{bmatrix}, \begin{bmatrix} 6 & 5 \\ 9 & -3 \end{bmatrix}$  (ii)  $\begin{bmatrix} -4 & 4 \\ 9 & -3 \\ 2 & -4 \end{bmatrix}, \begin{bmatrix} 4 & 0 \\ 5 & -4 \\ 2 & -4 \end{bmatrix}$  (iii)  $\begin{bmatrix} -7 \\ 2 \\ -4 \end{bmatrix}, \begin{bmatrix} 4 & 0 \\ 5 & -4 \\ 2 & -4 \end{bmatrix}$  (iv)  $\begin{bmatrix} -4 & 4 \\ 9 & -3 \end{bmatrix}, \begin{bmatrix} -7 & 5 \\ 8 & 7 \end{bmatrix}$   
(v)  $\begin{bmatrix} 6 & 5 & 0 \end{bmatrix}, \begin{bmatrix} 9 & 4 & -3 \\ 2 & -8 & 1 \end{bmatrix}$

28. Which of the following pairs of matrices can be multiplied?

- (i)  $\begin{bmatrix} 4 & 7 \\ -6 & 0 \\ 5 & -9 \end{bmatrix}, \begin{bmatrix} -7 & -1 \\ 2 & 7 \end{bmatrix}$  (ii)  $\begin{bmatrix} 3 \\ 6 \end{bmatrix}, \begin{bmatrix} -7 & -1 \\ 2 & 7 \\ 5 & -9 \end{bmatrix}$  (iii)  $\begin{bmatrix} 4 & 7 \\ -6 & 0 \end{bmatrix}, \begin{bmatrix} 8 & -7 \end{bmatrix}$  (iv)  $\begin{bmatrix} 8 & 2 & -2 \end{bmatrix}, \begin{bmatrix} -6 & 8 & -1 \\ -2 & 0 & -3 \end{bmatrix}$   
(v)  $\begin{bmatrix} -7 & -1 \\ 2 & 7 \\ 5 & -9 \end{bmatrix}, \begin{bmatrix} -6 & 8 & -1 \\ -2 & 0 & -3 \end{bmatrix}$

29. Which of the following pairs of matrices can be multiplied?

- (i)  $\begin{bmatrix} -4 \\ 9 \\ -5 \end{bmatrix}, \begin{bmatrix} 8 & 3 \\ -3 & 0 \\ 0 & 8 \end{bmatrix}$  (ii)  $\begin{bmatrix} -5 & -4 \\ -4 & -1 \end{bmatrix}, \begin{bmatrix} 8 & 3 \\ -3 & 0 \\ 0 & 8 \end{bmatrix}$  (iii)  $\begin{bmatrix} 4 & 7 \end{bmatrix}, \begin{bmatrix} -3 \\ -3 \end{bmatrix}$  (iv)  $\begin{bmatrix} 9 & 5 & 6 \end{bmatrix}, \begin{bmatrix} -8 & 5 & 0 \\ -3 & 9 & 9 \end{bmatrix}$   
(v)  $\begin{bmatrix} -5 & -4 \\ -4 & -1 \end{bmatrix}, \begin{bmatrix} 4 & 7 \end{bmatrix}$

30. Which of the following pairs of matrices can be multiplied?

- (i)  $\begin{bmatrix} -3 & 9 \\ 9 & 2 \end{bmatrix}, \begin{bmatrix} 9 \\ -4 & 3 \end{bmatrix}$  (ii)  $\begin{bmatrix} -1 \\ 6 \end{bmatrix}, \begin{bmatrix} 9 \\ -9 & -2 & 1 \end{bmatrix}$  (iii)  $\begin{bmatrix} -9 & -2 & 1 \end{bmatrix}, \begin{bmatrix} -6 & 6 & 2 \\ 0 & -7 & 1 \end{bmatrix}$  (iv)  $\begin{bmatrix} 9 \\ -1 \end{bmatrix}, \begin{bmatrix} -1 & -6 \\ -4 & 2 \\ 3 & 3 \end{bmatrix}$   
(v)  $\begin{bmatrix} -3 & 9 \\ 9 & 2 \end{bmatrix}, \begin{bmatrix} -1 & -6 \\ -4 & 2 \\ 3 & 3 \end{bmatrix}$

31. Which of the following pairs of matrices can be multiplied?

- (i)  $\begin{bmatrix} -5 \\ 5 \\ 6 \end{bmatrix}, \begin{bmatrix} -6 & 9 \\ 9 & -3 \\ -2 & -1 \end{bmatrix}$  (ii)  $\begin{bmatrix} 7 & 2 \\ -3 & 6 \end{bmatrix}, \begin{bmatrix} -6 & 9 \\ 9 & -3 \\ -2 & -1 \end{bmatrix}$  (iii)  $\begin{bmatrix} 7 & 2 \\ -3 & 6 \end{bmatrix}, \begin{bmatrix} 1 & 6 \end{bmatrix}$  (iv)  $\begin{bmatrix} 1 & -5 & 1 \\ -7 & 4 & 1 \end{bmatrix}, \begin{bmatrix} -5 \\ 5 \\ 6 \end{bmatrix}$   
(v)  $\begin{bmatrix} 7 & 5 & -5 \\ -7 & 4 & 1 \end{bmatrix}, \begin{bmatrix} 1 & -5 & 1 \end{bmatrix}$

32. Which of the following pairs of matrices can be multiplied?

- (i)  $\begin{bmatrix} -3 & -8 \end{bmatrix}, \begin{bmatrix} -1 & 1 & -3 \\ 6 & 1 & 7 \end{bmatrix}$  (ii)  $\begin{bmatrix} -2 & 9 & 6 \end{bmatrix}, \begin{bmatrix} -1 & 1 & -3 \\ 6 & 1 & 7 \end{bmatrix}$  (iii)  $\begin{bmatrix} -5 & 2 \\ 3 & 2 \end{bmatrix}, \begin{bmatrix} 3 & -2 \\ 7 & 2 \\ 1 & -8 \end{bmatrix}$  (iv)  $\begin{bmatrix} -5 & 2 \\ 3 & 2 \end{bmatrix}, \begin{bmatrix} -3 & -8 \end{bmatrix}$   
(v)  $\begin{bmatrix} 2 \\ -7 \\ -8 \end{bmatrix}, \begin{bmatrix} 3 & -2 \\ 7 & 2 \\ 1 & -8 \end{bmatrix}$

33. If A and B are given as below, neither  $(A \times B)$  nor  $(B \times A)$  is possible for which of the following pairs?
- (i)  $1 \times 3, 2 \times 3$  (ii)  $1 \times 2, 2 \times 3$  (iii)  $3 \times 1, 1 \times 3$  (iv)  $2 \times 3, 3 \times 1$  (v)  $1 \times 2, 2 \times 1$

34. If A and B are given as below, neither  $(A \times B)$  nor  $(B \times A)$  is possible for which of the following pairs?
- (i)  $1 \times 2, 2 \times 1$  (ii)  $1 \times 2, 2 \times 3$  (iii)  $3 \times 1, 1 \times 3$  (iv)  $3 \times 2, 1 \times 2$  (v)  $2 \times 3, 3 \times 1$

35. If A and B are given as below, neither  $(A \times B)$  nor  $(B \times A)$  is possible for which of the following pairs?
- (i)  $2 \times 3, 3 \times 1$  (ii)  $2 \times 2, 3 \times 3$  (iii)  $1 \times 2, 2 \times 3$  (iv)  $1 \times 2, 2 \times 1$  (v)  $3 \times 1, 1 \times 3$

36. If A and B are given as below, neither  $(A \times B)$  nor  $(B \times A)$  is possible for which of the following pairs?
- (i)  $1 \times 2, 2 \times 3$  (ii)  $1 \times 2, 2 \times 1$  (iii)  $3 \times 1, 1 \times 3$  (iv)  $2 \times 3, 3 \times 1$  (v)  $3 \times 1, 3 \times 2$

37. If A and B are given as below, neither  $(A \times B)$  nor  $(B \times A)$  is possible for which of the following pairs?
- (i)  $3 \times 1, 1 \times 3$  (ii)  $3 \times 1, 3 \times 2$  (iii)  $2 \times 3, 3 \times 1$  (iv)  $1 \times 2, 2 \times 3$  (v)  $1 \times 2, 2 \times 1$

Express the following equation in the matrix form

38.  $a_1x + b_1y + c_1 = 0$  and  $a_2x + b_2y + c_2 = 0$

(i)  $\begin{bmatrix} a_1 & b_1 \\ a_2 & b_2 \end{bmatrix} \begin{bmatrix} c_1 \\ c_2 \end{bmatrix} + \begin{bmatrix} x \\ y \end{bmatrix} = 0$  (ii)  $\begin{bmatrix} a_1 & a_2 \\ b_1 & b_2 \end{bmatrix} \begin{bmatrix} x \\ y \end{bmatrix} + \begin{bmatrix} c_1 \\ c_2 \end{bmatrix} = 0$

(iii)  $\begin{bmatrix} a_1 & b_1 \\ a_2 & b_2 \end{bmatrix} \begin{bmatrix} x \\ y \end{bmatrix} + \begin{bmatrix} c_1 \\ c_2 \end{bmatrix} = 0$  (iv)  $\begin{bmatrix} a_1 & b_1 \\ a_2 & b_2 \end{bmatrix} \begin{bmatrix} x \\ y \end{bmatrix} \begin{bmatrix} c_1 \\ c_2 \end{bmatrix} = 0$

## Assignment Key

1) (ii)	2) (ii)	3) (iv)	4) (ii)	5) (i)	6) (iv)
7) (i)	8) (i)	9) (iv)	10) (ii)	11) (iii)	12) (ii)
13) (iv)	14) (iii)	15) (v)	16) (v)	17) (ii)	18) (i)
19) (iv)	20) (iii)	21) (iv)	22) (v)	23) (v)	24) (i)
25) (v)	26) (v)	27) (iv)	28) (v)	29) (iii)	30) (ii)
31) (iv)	32) (i)	33) (i)	34) (iv)	35) (ii)	36) (v)
37) (ii)	38) (iii)				